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ABSTRACT

This paper is a preliminary report on some aspects of a field study on modernization conducted in the Cook Islands during 1974-75. Polynesians enjoy a widespread reputation for generosity and communal cooperation. Ethnographic and structured techniques were combined to explore changes in these personality dimensions under the impact of modernization and Western schooling. Two experiemntal procedures were used to examine intragroup variation in rivalry and competition among both adults and children, along with structural, experiential, and behavioral correlates of this variation: (1) the Coin Game, which attempts to capture (within an experimental context) the conflicting choices encountered in everyday life by offering subjects an opportunity to distribute valued goods to themselves and others in a variety of ways; and (2) The Masden Cooperation Board, which provides a context in which either cooperative or competitive behavior can occur, but only cooperative acts are rewarded. Some implications for educational policy are presented. (Author/ED)

THE IMPACT OF MODERNIZATION ON POLYNESIAN PERSONALITY

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ABSTRACT

This paper is a preliminary report on some aspects of a field study conducted in the Cook Islands during 1974-75. Polynesians enjoy a widespread reputation for generosity and communal cooperation. A combination of ethnographic and structured techniques was used to explore changes in these personality dimensions under the impact of modernization and Western schooling. Two experimental procedures are reported which examine intragroup variation in rivalry and competition among both adults and children, along with structural, experiential, and behavioural correlates of this variation. Some implications for educational policy are presented.

THE PLACE AND THE PROBLEM*

> Some of my friends and I have a question for you. We want to know whether in other civilizations that are not bound by the competitive ethic like the Americans, children still have that built-in little tune that they just know, they're born with, that little tune of "Nyaa, nyaa, nya nyaa, nyaa. I'm bigger than you are," or "I'm better than you are; I've got one and you don't." Just seems that they all know that automatically around here, even though we try so hard to discourage it. We were wondering if maybe this is universal, or if it's just the result of our "evil" society over here.

A middle-class California housewife sent us that lament while we were living in the Cook Islands for a year, learning what we could about the impact of westernization on Polynesian personality and behaviour. The South Pacific is not what it was when Gauguin forsook European civilization to paint langorous and florid visions of the Tahitian ethos, or even at the time of the romantic World War II musical. But away from the tourist centres many islands still retain enough of a traditional, non-competitive orientation to serve as natural laboratories for studying this issue.

In our own society, interpersonal rivalry and competition are so thoroughly institutionalized that most of us accept them as fundamental human drives. Whatever cooperation in restraint of trade may actually take place, our economic system is built on the idea that through free competition everyone benefits: the businessman makes money, and the consumer gets the finest possible product in ample supply at the lowest possible price. Our legal system is founded on an adversary approach, in which it is assumed that if each side of an issue advocates its cause with all the skill, guile, and resources at its command, truth and justice will somehow emerge. Competitive sport occupies a sizable portion of our time and talent, and is seen as a natural path for "building character" among our youth. And our educational system, the institutional repository of conventional wisdom, is founded on the notion that the best way to motivate a child to work hard in school is to put him in competition with his classmates.

We can all point now to obvious and ironic failures in these institutions and their rationale, and many are searching for viable alternatives. Nevertheless, Social Darwinism is alive and well as the fundamental philosophy of the average man in our society, and any challenge to its principles is still apt to be labelled as no more than starry-eyed idealism.

Island Polynesia presents a marked contrast in interpersonal relations, and one which has long attracted disillusioned drop-outs from the West. European visitors, from the times of the earliest sailing vessel crews to modern day tourists and anthropologists, have been impressed by the friendliness, the generosity, and the lavish displays of individual and communal hospitality which typify island life. Whether a Hawaiian lu'au, Maori hui, Cook Island umu kai, or Samoan fa'alave tele, these exemplify a level of community participation and sharing of resources which Western groups can rarely expect from their members. And the ability of Polynesian congregations to raise incredible sums of money from what appear to be relatively poor parishioners is the wonder of Western churchmen.

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* The authors wish to thank the Cook Island Department of Education, school officials and teachers on Aitutaki for their cooperation throughout this project, and the Royal Society of New Zealand for financial support.

The motivation behind these displays of "conspicuous generosity" is a matter of debate among professional observers. Some see them as ways to express and reinforce feelings of communal attachment and well-being (Hohepa 1964, Metge 1967), others as strategies for taming trigger-happy foreigners and benefitting by their trade (Finney 1973) or as a means of gaining prestige and status within one's own group (Pitt 1970, Hohepa 1964). One experienced observer firmly avows, "I don't know a single generous Samoan." This cynicism seems a bit overdrawn. All behaviour has mixed motives, and doubtless the nature of this mix varies from individual to individual and from group to group. But what seems to us important to recognize is that the Polynesian system of mutual interdependence creates habits of interpersonal behaviour which cannot easily be thrust aside, even when non-reciprocation produces resentment.

Island life is changing, however, and with it are coming changes in these habits of generosity and cooperation as well. Polynesian community members themselves often describe a decline in modern times of whole-hearted community participation and voluntary gifts of labour and food. Some see this as the growth of an un-Christian, selfish materialism, while others welcome the opportunity to escape what they see as unreasonable obligations imposed on them by family and community. Greater individual independence, with its potential for selfishness, is a Western luxury many Polynesians are glad to be able to afford.

In our research on modernization in the Cook Islands, we have used this variation in adaptation among individual islanders as a key to understanding the process of social change. We chose to work on the island of Aitutaki because it provides a range of variation along a number of dimensions. Situated in the southern group of the Cook Islands 140 miles north of the nation's capital in Rarotonga, Aitutaki has characteristics of both high island and coral atoll. The main island, about twelve kilometres in circumference, provides good volcanic soil for agriculture, both subsistence and cash crops: oranges, bananas, and copra (Johnston 1967; Bassett & Thomson 1968). Stretched around it and to the south and east is a wide lagoon with many small islets fringing the reef, allowing excellent fishing.

With its population of about 2500, Aitutaki is roughly midway in the process of modernization in the Cook Islands. Proportionately, it has far more persons still involved primarily in planting and fishing activities than in Rarotonga, but has more wage labour opportunities than are available in the northern atolls. The Cook Islands, a New Zealand protectorate until 1965, is now self-governing, and its people retain New Zealand citizenship. This has made out-migration relatively simple, and about half of all Cook Islanders now live in New Zealand. A large contingent of American troops stationed on Aitutaki during the Second World War built a major airstrip which still serves the island, and shipping is more regular than for the rest of the group except Rarotonga. This has made both permanent and circular migration to New Zealand common and long-standing. Almost every adult on Aitutaki has close family members living in New Zealand, and money sent home from abroad plays an important role in the local economy.

On the island itself there are strong contrasts in degree of modernization and acculturation from one area to the next. On the west or harbour side, where the first shops were built and where the administration buildings, hospital, and post office are located, modern facilities such as running water and electricity are readily available, and housing is relatively modern. In the more isolated areas toward the northern tip, in the hilly interior, and

on much of the eastern side, such amenities are not provided, thatched roofs of nikau palm are more common, and shops are small and few. Thus although great variation between islands is also to be expected, Aitutaki is the closest to a crystalization in one spot of the process of socio-economic change to be found in the Cook group.

Living in Aitutaki we saw the finest in traditional Polynesian friendliness and generosity. The island has a reputation, which it justly treasures, for the hospitality with which it greets visiting tere (traveling) parties (Beaglehole 1957), and tere parties from Aitutaki go elsewhere several times a year, bearing gifts of local food and hand-craft for their hosts. Children are trained in generosity by carrying food to relatives and neighbours, taking the family's contribution up to the plate in church, and helping to serve at the many feasts.

A highlight in the yearly round of conspicuous generosity is an annual dance from village to village performed by one of the seven villages on Christmas Day and by another on New Year's Day. The visiting village group dances and sings in each of the other six, and with much oratory and fanfare, their hosts attempt to give them more lavish hospitality and more money than they themselves last received. In 1974-75 each visiting group earned over $2,000 for their village during their day of dancing.

Locally raised Aitutakians, however, bemoan the passing of what they consider true community spirit. It is said that village meetings on Sunday evenings used to attract over a hundred people, whereas today an attendance of 15 to 20 is considered a good turn-out. In one village, voluntary work parties met every Monday afternoon to clear roads to the plantations, keep up the sports grounds, thatch the roof of an elderly widow, or perform other village tasks not taken care of by the island's Public Works Department. Although every able-bodied man between the ages of 16 and 60 was expected to participate, an available pool of over 70 men, only about a quarter of these usually turned up, and never over half. Young people show a waning interest in sport, and some villages even find it difficult to form singing and dance groups for annual celebrations. Aitutakians mistakenly tend to blame out-migration for this state of affairs*, but also comment that those persons available for participation don't show as much interest as formerly. "You just can't get these people (women, youths, children, men) to cooperate any more!" is a frequent complaint.

These perceived changes in the quality of community life in Aitutaki accompany pervasive historical changes which began to have island-wide impact in the late 1950s. One of the most important of these has been the increase in wage labour, which was still minimal even during the immediate post-war period studied by Beaglehole (1957). By the early 60s, however, Johnston

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* Between 1971 and 1973 there was a 10% population loss from out-migration, but because of previous growth, the number of people within every age-sex category was still almost identical to that found in the census of 1966. In 1975, after another 10% had left, there are still more people living on the island than there were in the 50s, a golden age of community participation. If this trend continues, however, coupled with a sharp decline in the birth rate during the last 15 years (from 10 children per adult woman to 6 now), out-migration could become a major problem for the community. We found that by age 23 86% of the young people have now left the island.

(1967) found one-third of the household heads in the village of Amuri were employed for wages, while the remainder were planters and fishermen. The 1974 Aitutaki electoral rolls list only 47% as planters or fishermen, and according to our own survey data, perhaps a third of these are actually more involved in the cash economy as entrepreneurs or craftsmen than they are in their traditional pursuits. Since most employers* run a standard European 8-hour day, subsistence activities must be sandwiched in before and after work and on weekends, even though there may not be a full day's work to be done on their regular job. Consequently, informants estimate that only about one-third as much acreage is now under cultivation as in the 1950s**, and dependence on imported Western goods and foods is increasing.

During this same period the influence of the Western system of education has increased with the growth of schools. Small mission schools came first, then a government school was established shortly after World War I. But it was not until after the 1950s that this was expanded and two more schools built in the outlying areas, making compulsory education until the age of 15 a possibility. School teachers were among the first Aitutakians to learn directly about the New Zealand way of life; not only were a few educated there, but many others were sent to New Zealand for special observation and training courses. Schools serve asdisseminators of Western principles and attitudes, with an expatriot New Zealander heading the high school even today. The best students (approximately 15%) are creamed off the Form II class each year and sent to the high school in Rarotonga, Tereora College. After Grade Two all instruction is in English, and the curriculum is largely adapted from Western models, with European subjects and methods given far more emphasis than activities involving Maori language and culture.***

To investigate the psychological effects of these historic changes we used a variety of techniques. For the first six months we were mainly participant observers - in work groups, village organizations, schools, churches, and homes to give us an overall picture of daily life, its demands and rewards. Extensive systematic observations, employing both narrative reports and quantitative categories, were made in all three elementary schools and in an island-wide sample of homes with preschool children. Interviews were conducted with teachers and parents or caretakers of children being observed and tested in the schools, and a variety of attitude tests and experimental procedures were developed in the field and administered to both adult and school-age samples. In this paper we shall focus primarily on the results of two psychological experiments designed to explore the correlates of rivalry-generosity and cooperation-competition.

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* Major employers are various government departments - Public Works, Electric Power, Agriculture, the Post Office and Police - and the airport run by the N.Z. Ministry of Transport. A number of shopkeepers also employ extra clerks.

** Even ten years ago Bassett and Thomson (1968) found only two-thirds the acreage under cultivation as earlier.

*** The Cook Island Government is taking steps toward recognizing Maori culture in the schools. Recently a course in social studies emphasizing Cook Island history and customs has been developed, and a special Maori cultural activities period as well as formal instruction in the Rarotongan dialect of Maori is held several times a week. These are as yet token gestures, however, since the major curriculum and modes of instruction remain Western rather than bicultural in style.

EXPERIMENT ONE: THE COIN GAME

The Coin Game, which we developed in the field, attempts to capture within an experimental context conflicting choices encountered in everyday life and the varying ways in which Islanders respond. Building on earlier work by Kagan and Madsen (1972), the task is both simpler in format and more complex in content than their technique. We found it suitable for use with subjects as young as five, yet it retains the interest of sophisticated adults. It is therefore appropriate for developmental studies, and for comparisons between parents and their children.

The technique offers subjects an opportunity to distribute valued goods to themselves and to others in a variety of ways which simulate real-life situations. Each subject is presented sequentially with two cards about 170 by 105 millimetres, divided horizontally by a line at the mid-point. The subject is told that he can choose either the left or the right card, and that in either case he will get the coins placed on the side of the line closest to him, while someone else will get the coins on the far side.* The experiment consists of ten pairs of stimulus cards (one pretrial practice pair and nine real choice pairs), each offering the subject a unique combination of pay-off options. These are presented in Figure 1 (following page), which includes the potential strategies represented by a left or right hand choice. Looking at the pretrial pair, for example, when vertical comparisons are made, the left-hand choice allows the subject to "equalize" the pay-off between himself and the other (each gets two), whereas the right-hand choice is a "rivalrous" response whereby he takes more than he gives to the other fellow (he takes three and gives the other only one). When horizontal comparisons are made, the right-hand choice allows the subject - without regard to the other fellow - to "maximize" his own pay-off (he gets three rather than two), while the left-hand choice is a "generous" response which maximizes the other's pay-off (other gets two rather than one). In the experiment as a whole, these four options - rivalry, generosity, equalization and maximization - are provided in all possible permutations.

Since most choices can be interpreted as representing more than one possible strategy, only an analysis of the subject's total performance will normally make clear which of these four strategies he is pursuing. In the case of "equalization", furthermore, a subject may equalize his and other's shares overall without ever selecting the "equal" option. This permits the subject to take advantage of opportunities to maximize his own and/or the other's pay-off at the same time. The most highly refined strategy of this type involves an effort to maximize the pay-off to both parties at the expense of the experimenter.** The pursuit of any of these strategies involves trade-offs; consequently, most subjects compromise somewhat, and are less than consistent throughout. Every pair offers one "rivalrous" option, however. A total score of six or more of these rivalrous choices out of nine (excluding the pretrial) has been used throughout this paper as

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* Sweets, raisins, nuts, or tokens of various kinds could also be used.

** This strategy, which we have termed "cooperative", does not reveal itself on the pretrial or first pair, where no cooperative choices of this kind are possible. From then on, however, the pattern runs LLRLRRRL, and is most clearly indicated by the left to right shift in the mirrored pairs 3 and 4. As one subject described the strategy, "I give him the most when it doesn't matter to me, and take the most for myself when it doesn't matter to him."

Figure 1.

COIN GAME PAY-OFFS AND STRATEGIES

	Cards		Pay-Off Options Represented*	
	left	right	left	right
Pretrial	oo / oo	o / ooo	E (G)	R (M) (R)
1	o / oo	oo / o	R (M) (R)	G (G)
2	ooo / ooo	o / oo	E (M) (G)	R (R)
3	oo / o	o / o	G (G)	E (R)
4	o / o	o / oo	E	R (M)
5	ooo / oo	o / o	G (M) (G)	E (R)
6	o / oo	ooo / oo	R (R)	G (G)
7	ooo / o	oo / oo	G (G)	E (M) (R)
8	/ o	ooo / oo	R (R)	G (M) (G)
9	oo / oo	o / oo	E (G)	R (R)

* E - Equality, R - Rivalry, G - Generosity, M - Self-Maximization
( ) - left-right comparison, no parentheses - upper-lower comparison

indicating a "rivalrous" predisposition, while a score of three or less has been used to represent a "generous" predisposition.* Scores of equalizers fall in between these two extremes.

These strategies, we believe, effectively simulate major and conflicting alternative responses among which people are choosing in their daily lives. Many subjects themselves spontaneously saw the task in these terms. One old man, for example, following a generous strategy, referred to the aro'a in his heart. "I am always like that," he explained. "If there is not enough food to share, I always leave myself outside." Such generosity traditionally helped to build and maintain a network of reciprocal obligations on which one could later draw. As another subject said, "I like my friend. I like him to be happy about what I am doing for him. If I give him more now, maybe sometime I'll ask him to do something for me."

When talking about their Coin Game performance, an analogy with fishing was common. As one expert ravakai explained it, as leader of a fishing expedition he distributes the catch to all participants when they get back, and if there is not enough to go around he takes less for himself. "Otherwise people would say I was greedy." "Tuna is the worst kind of fishing," another informant explained. It is hard work, takes a whole day, but you end up with very little. Everyone knows about your catch even before you return home ("You can't hide a mountain," he said) and they will expect to share in your skill and good fortune. When the leader of one village returned with three good-sized tuna one day, his large family ended up with only the heads. "And there's not much meat on the heads," he remarked ruefully.

Although we believe that "generosity" represents the traditional ideal for conducting interpersonal relations, particularly for high status community members, an "equalization" strategy represents an accepted alternative today. Subjects frequently expressed their desire to be "fair", "to make it the same, so there will be no trouble," one candidly explained. Conflict avoidance is an important goal in interpersonal relations (Howard 1974), and dividing things equally, while it may not be as effective in building prestige or creating reciprocal obligations, at least avoids jealousies. "Cook Islanders want everyone to be equal," a businessman explained in frustration, spreading his hands out palms down in a levelling gesture. As in other peasant societies, persons who try to "get ahead" of their neighbours may become objects of subtle and not so subtle efforts to cut them down to size (Foster 1966).

From equalization a strategy of self-maximization can be reached by small increments. "I don't want him to get less," one subject explained, "but I want mine just a little bit more, not much." "I'll be greedy" one school teacher exulted, adopting a pure "maximization" strategy, and he was sure his pupils would do the same. "The children will go for the most," he predicted, although they often didn't, as we will see below.

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* A score of 6 on rivalry can be achieved without sacrificing one's own pay-off only by making a rivalrous choice every time the opportunity presents itself without cost. This consistency of performance has the same chance probability as flipping a coin six heads in a row, or one in sixty-four. All other combinations yielding a score of 6 on rivalry, and all scores of 7 or more, require the subject to make a personal sacrifice to achieve his purpose. The same is true to receive a score of 3 or less. These cut-offs therefore appear to represent relatively clear deviations from chance.

we assume that a rivalrous strategy is a Western import. Here the aim is not simply to get the most for yourself, but "to win", (a relative rather than an absolute gain), "to get more than the other fellow" as our informants usually described it.

Procedure

With children the Coin Game experiment was administered as follows. Two children of the same sex and school grade were brought in and seated at opposite ends of a small table. A trained Cook Island experimenter sat on one side between them; the child to his left was the subject, the one to his right was the observer. The authors sat about three metres to each side of the subject, within his peripheral vision, but where they would be minimally distracting. There they could observe and record his performance, as well as his interaction with both the observer and the experimenter. Attempts were made to provide a permissive, friendly, and non-threatening environment, with no restraints placed on the behaviour of either the subject or the observing child. The experimenter was not a teacher or man of authority or rank in the community. Rather, he was a mild-mannered man in his mid-forties, fairly traditional in personal orientation, who could generally put the children at their ease. The authors had been living and working on the island for six months before the experiments began, and were well-known to most of the children.

Except for two or three cases where children newly returned from New Zealand felt more comfortable in English, all experiments were conducted in Cook Island Maori. The subject was told, "Now we are going to do something which will make you think. Here are two jars, one for you, and one for the boy/girl sitting over there." The experimenter placed two glass jars to the left of the subject, one closer to the other child. "Now, here are two cards." The experimenter placed the two pretrial cards in front of the subject, covering each circle with one-cent pieces as he said, "You can choose either card you want. Some children choose the one on the left, some choose the one on the right. If you choose the one on the left," pointing, "you will get the money on this side" (points) "and the boy/girl sitting over there will get the money on that side" (points again). "If you choose the one on the right, you will get the money on this side, and he/she will get the money on that side. Now, which card do you want to pick?" After the child made his choice, the experimenter said, "All right. Put your money into your jar," (pointing) "and the other boy's/girl's money into his/her jar." This procedure physically involved the experimental subject in the distribution of the pay-off, and insured that he understood the task. If the child had no questions, the experimenter went on, "This was just for practice. Now, at the end, when we finish all the cards," (holding up the cards), "you will get to keep the money in your jar, and the other boy/girl will get to keep the money in his/her jar. All right. Now we will begin."

At the end of the experiment each child was given the money in his own jar, the observing child was dismissed, and the experimental child moved into the other chair, becoming an observer for the next experimental subject.*

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* This procedure insured that all but the first child of each sex in each grade faced the experimental task fresh without having seen another child's choices, whose behaviour he might model. It also prevented the possibility of collusion between pairs, since no child received pay-offs from the same child to whom he gave them. We wish to thank Dr. David Thomas of Waikato University for having suggested this approach to us.

This procedure was designed to provide as neutral a testing situation as possible, while still presenting the subject with a real interpersonal situation and choices which mattered.

Results - Adult Community Sample

The Coin Game was administered to 80 men and 67 women from all over the island. The men were almost all fathers or caretakers of Form 1 (U.S. Grade 6 equivalent) children. To the extent that having a child of this age is a random process, this sampling procedure has produced a diverse and probably fairly representative group of subjects, though both old and young men are under-represented. The women were either mothers/caretakers of Form I children, or of five year old children being observed in their homes. Again, they seem representative of the diversity found in the adult population of Aitutaki, except that there were few women included over 50 years old.

The Coin Game was usually given as part of a longer interview which touched on a wide range of psychologically relevant topics. The interview was usually given in Cook Island Maori by one or the other author, depending on the sex of the subject, with local research assistants present to help us with any difficulties translating replies. The Coin Game, however, was usually administered by a same-sex research assistant. Since most of these adults were interviewed in their homes, it was not feasible to provide a "real other" observing subject whose special relationship as relative or guest would not bias the results. Adults were therefore asked to "imagine another man/woman sitting there across from you." (This procedure will be referred to as the "hypothetical other", in contrast to the "real other" procedure used among most of the children. Our other deviation from the procedure used with children was that among adults two-cent pieces rather than one-cent pieces were used.) The sociological indices which we will correlate with adult behaviour on the Coin Game were obtained either from other sections of the interview, or from a survey conducted earlier within approximately 150 households whose children we were testing in the schools.

If as we have argued, rivalry is a western import, then rivalrous behaviour on our Coin Game should be correlated with other indices of "Westernization".* In line with our previous work in this problem-area (c.f. Graves 1967a and b; N. Graves 1971 and in Press, Graves & Graves 1975), these can be divided into three groups: indices of <u>exposure</u> to western influences, <u>access</u> to the rewards of western life, and <u>identification</u> with western ways as personally appropriate and desirable, in contrast with continuing identification with Cook Island Maori tradition.

<u>Exposure</u> to western influence, as we have already noted, is of long-standing, and even elderly men were only young adults when the American troops first landed thirty years ago. But since this influence has been increasing in intensity, we would expect younger Aitutakians to exhibit more westernized personality characteristics than older members of the community. Actually, the trend in this direction among men is neither strong nor statistically

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* In this analysis we will mainly concern ourselves with the rivalrous strategy, and secondarily with generosity. Equalization and self-maximization can be considered transitional strategies in the modernization process, and are not a focus of this report.

significant* (see Table 1, following page). Younger men are more rivalrous than older men, particularly in the extreme groups: 71% of the men in their 20s were rivalrous (5 of 7), whereas only 25% of the men in their 60s or older were rivalrous (3 of 12), while those in their 30s, 40s, and 50s are intermediate. Among women, however, even this weak association is not found. Selective out-migration seems a likely explanation. Young people are leaving the island at an ever increasing rate, and it is logical that those left behind are among the less ambitious and rivalrous. This is particularly true for women, who have few job opportunities on the island.

Age and educational attainment are obviously correlated (negatively), since younger adults have had more opportunity to attend school into higher grades. But educational opportunities have always been differentially distributed within the community, and for both men and women this fact is an important predictor of a rivalrous personality. Twenty-nine percent of our sample did not complete primary school (Cook Island Grade 8/Form II, U.S. Grade 7 equivalent), and this group has a significantly lower probability of being rivalrous on the Coin Game ($p < .05$) than the rest of the sample, ranging from 25% (women) to 38% (men). Slightly over half of those who completed primary school are rivalrous, regardless of sex, and among men the probability of being rivalrous increases even further if they have additional education beyond primary school.

Although Aitutaki is a small island, the location of a person's home will still influence the amount of daily contact he has with commercial and governmental institutions operating on an individualistic, contractual basis, and the seven villages differ in the social milieu they present. For purposes of an all-island annual rugby match, the administrative centre and the two adjacent villages are designated as "town", while the other four villages combine forces to create a "country" team. This corresponds fairly well to the spacial distribution of intense Western influence, and it has psychological reality as well. For both men and women, those living in town have a substantially higher probability of being rivalrous on our Coin Game than those living in the country. Combining men and women, town dwellers are 61% rivalrous, country dwellers 37% rivalrous ($p < .02$).

Finally, over a third of the men in our sample, and over a fifth of the women, have been to New Zealand at least once, a few for substantial periods of up to 16 years. Regardless of the length of their stay, this group has a significantly higher probability of being rivalrous than those who have never been to New Zealand: 60% among those with any New Zealand experience; only 40% among those with none ($p < .05$).

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* As a standardized yardstick to help the reader evaluate the magnitude of our results, two-tailed chi-square tests of statistical significance will be reported throughout this paper. The appropriateness of applying formal significance tests to the types of data being presented here is open to question, however (Morrison & Henkel 1970), and the reader is warned not to place much stock in them. In evaluating our results, it is better to consider the overall pattern of associations which emerge, their consistency across measures and across samples, and their congruence with theoretical expectations. Given the crudity of social-psychological measurement, particularly cross-culturally, and the multiple forces determining human behaviour, however, even weak trends may be of theoretical interest.

Table 1.

RELATIONSHIPS BETWEEN EXPOSURE TO WESTERN INFLUENCE AND RIVALRY/GENEROSITY
- Adult Community Sample -

	Men		Women	
Age				
20s	N = 7*	R = 71% G = 0%	N = 12	R = 33% G = 8%
30s	N = 19	R = 53% G = 21%	N = 23	R = 35% G = 26%
40s	N = 24	R = 54% G = 21%	N = 15	R = 53% G = 33%
50s	N = 15	R = 40% G = 13%	N = 8	R = 50% G = 25%
60s +	N = 12	R = 25% G = 25%	N = 5	R = 40% G = 20%
Education				
more than grade 8	N = 19	R = 63% G = 11%	N = 16	R = 50% G = 19%
grade 8	N = 31	R = 52% G = 19%	N = 24	R = 54% G = 12%
less than grade 8	N = 21	R = 38% G = 24%	N = 16	R = 25% G = 38%
Location on Island				
town	N = 24	R = 62% G = 8%	N = 17	R = 59% G = 12%
country	N = 52%	R = 42% G = 23%	N = 47	R = 34% G = 28%
New Zealand Experience				
some	N = 28	R = 61% G = 11%	N = 12	R = 58% G = 17%
none	N = 47	R = 40% G = 23%	N = 43	R = 40% G = 23%

* Six subjects with rigid responses to the Coin Game have been eliminated from these analyses: two men in their 60s and one in his 40s; one woman in her 20s, one in her 40s, and one in her 60s. The age of one woman is also missing. In future tables Ns vary slightly because of missing data.

In a multi-ethnic society, access to the rewards of the dominant group's way of life include the psychological rewards which accompany social acceptance. But on Aitutaki where only a handful of Europeans reside, the fruits of Westernization are mainly obtainable by cash.

As already noted, the occupational structure of the island has changed dramatically over the last twenty years. Since high status men were only slightly over-represented in our sample, we were surprised to discover that over 40% of the sample were skilled craftsmen (mainly carpenters and mechanics), businessmen, teachers, and senior civil servants. Within this group various occupational subgroups did not seem to differ much from each other in their behaviour on the Coin Game (teachers tended to be the most rivalrous), and so they have been combined. Another 30% were unskilled or semi-skilled labourers, while less than 30% are now occupied essentially full-time at traditional pursuits. Even these may take casual employment, especially on boat days, and many raise and sell cash crops.

Among men who are full-time planters and fishermen, and wives of such men, only about 30% were rivalrous (see Table 2). By contrast, this probability doubles among those in high status, Western occupations, or with husbands in such occupations, while day labourers fall in between. Combining men and women, the most traditional and the most Western occupational groups differ from each other in rivalry at a highly significant level ($p < .01$).

Because many of our sample in traditional occupations are earning fairly substantial amounts from cash crops, while some labourers, at an average wage of only about $15 (NZ) a week earn very little, we attempted to collect estimates of their cash income during 1974 from each family in our sample, as a second indicator of economic access. To increase reliability and simplify the task for informants, we asked about potential sources of income separately: wages, cash crops, other enterprises, pensions, and gifts from overseas. In the absence of many records, however, such estimates are not easy for people to make reliably. Accepting them for no more than they are, then, it is interesting to note that almost half of both the men and women in our sample reported a family income of less than $1,000 (NZ) during 1974, while less than 20% reported earning over $2,000 (NZ). With prices in the shops running about double those in New Zealand, the necessity for a heavy dependence on local food production is obvious.

For neither men nor women does reported cash income bear any relationship to rivalry on the Coin Game. This may be the result of inaccuracies in informant estimates of their income, or because the range in income is so small. Or perhaps marked variation in family size makes total income a poor measure of the money available for the purchase of western luxuries. Finally, through fishing and planting some families may substantially feed themselves, while others with a similar income may "fish in the stores", and so have cash for little beyond bare necessities.

As a more sensitive indicator of the amount of money available for Western goods, we obtained a "possessions index" based on a variety of fairly expensive modern machinery: outboard motors, lawn mowers, sewing machines, refrigerator-freezers, farm equipment such as tractors, cultivators and sprayers, and motor bikes, cars, and trucks.

The most frequent possession proved to be some form of motor transportation, usually a Japanese motorcycle, reported in almost two-thirds of the households. This seems largely a response to the same desire for rapid freedom of individual movement, even when distances are relatively small, which motivates Western dependence on the family automobile, and last year it caused Aitutaki to experience its own "oil crisis". Almost half the women possess sewing machines,

Table 2.

RELATIONSHIPS BETWEEN ECONOMIC POSITION AND RIVALRY/GENEROSITY
- Adult Community Sample -

Occupation	Men		Women	
planter/fisherman (or wife of)	N = 21	R = 29% G = 29%	N = 24	R = 33% G = 17%
labourer (or wife of)	N = 24	R = 46% G = 17%	N = 21	R = 38% G = 33%
skilled craftsman, professional, or businessman (or wife of)	N = 32	R = 62% G = 12%	N = 10	R = 50% G = 30%
employed woman			N = 8	R = 62% G = 12%
Annual Income (1974)				
less than $1,000	N = 34	R = 50% G = 18%	N = 25	R = 40% G = 20%
$1,000 to $1,999	N = 23	R = 48% G = 22%	N = 24	R = 46% G = 25%
$2,000 and over	N = 15	R = 53% G = 7%	N = 6	R = 50% G = 33%
Machinery Owned				
1 or less	N = 22	R = 41% G = 23%	N = 30	R = 40% G = 17%
2 - 5	N = 39	R = 46% G = 23%	N = 27	R = 33% G = 56%
6 or more	N = 10	R = 70% G = 0%	N = 3	R = 33% G = 33%

which are constantly in use making school uniforms, family clothing, and an incredible number of costumes for singing and dancing groups. About half the men also now have motor mowers, a relatively recent introduction which radically reduces perhaps the most back-breaking labour on the island: controlling coarse grass and weeds which otherwise yield only to a reap hook. Over a quarter of the families in our sample also now own refrigerators or freezers, which is radically changing traditional patterns of food distribution.

The relationship between the number of machines possessed and rivalry among men, though in the expected direction is not impressive; again, perhaps because the island's wealth is relatively evenly distributed, or because many such items are gifts from family in New Zealand. The third of the population with no major machinery or only one item (usually a motor bike) had a rate of rivalry of 41%, whereas the small group (14%) with 6 or more items had a rate of 70%. The majority of men with an intermediate number of possessions had a rivalry rate of 46%. The number of subjects in the high and low categories was too small for this association to achieve statistical significance, however, and among women even this tenuous association was not found.

In conclusion, although the type of job a man or woman's husband holds has a strong and consistent relationship to his or her probability of being rivalrous, other efforts to relate measures of cash income to a rivalrous personality predisposition have provided only trends for men, and no association for women. It would appear that it is something about the work itself, perhaps the educational attainment it requires or the independence it provides, which is responsible for its association with rivalry, rather than the Western possessions it makes possible.

Theoretically, identification with a Western way of life, and particularly with a social reference group which espouses Western ways, should be an important factor in the development of rivalry, by providing a strong motivation for adopting Westernized personality traits. Similarly, continued identification with traditional, non-Western ways should serve as an important barrier to the development of rivalry.

As measures of Western identification, one would ideally like indices which reflect a voluntary adoptiong of traditional or Western symbols which are non-functional in daily life (see N. Graves in Graves and Graves 1975). Food habits, when options are available, dress, particularly during non-working hours, same or cross-ethnic friendships, leisure time activities, and language spoken in the home are all potnetial indicators of this type. Most of these are not appropriate within the context of Aitutaki society. Everyone wears Western dress, and almost everyone, including Europeans, wears a pareu (lavalava) around home after the evening bath. There are too few Europeans living on the island to provide many opportunities for cross-ethnic friendships to develop, and only a handful of Aitutakians speak English in their homes. Family food habits, however, though confounded by income, might serve as one indicator of Westernization.

Fifty years ago almost all cooking on Aitutaki was done in pit ovens (umu) by first heating rocks, placing food wrapped in leaves on the rocks when the fire had burned down, and then covering the food with leaves and a layer of earth to steam. Food cooked in this manner is still highly prized, and almost every family in our sample cooked this way at least once a week. Only 4 men and 3 women (5%) said their family almost never made an umu, and over 70% of both groups said their family regularly did so at least once a week. Given this persistence of traditional food habits and tastes among modernizing islanders, we should perhaps not be surprised to find that those who cook this way regularly are no less rivalrous on our Coin Game than those who can do so less frequently (see Table 3).

Table 3.

RELATIONSHIPS BETWEEN CULTURAL IDENTIFICATION AND RIVALRY/GENEROSITY
- Adult Community Sample -

	Men		Women	
Earth Oven Cooking				
4 or more/week	N = 19	R = 63% G = 5%	N = 13	R = 46% G = 15%
2-3 times/week	N = 31	R = 52% G = 23%	N = 31	R = 35% G = 26%
less than 2	N = 20	R = 30% G = 30%	N = 18	R = 44% G = 17%
Church Membership				
C.I.C.C.	N = 55	R = 35% G = 20%	N = 40	R = 45% G = 20%
other	N = 19	R = 42% G = 16%	N = 19	R = 37% G = 32%
Church Attendance				
regular	N = 46	R = 43% G = 26%	N = 39%	R = 44% G = 26%
irregular	N = 28	R = 54% G = 7%	N = 18	R = 28% G = 22%

Church membership and attendance is also a potential indicator of identification with traditional moral directives, since the changes accompanying modernization are often seen locally as a departure from religious teaching. Aitutaki received the first Christian missionary in the Cook Islands more than 150 years ago, and the influence of the London Missionary Society on island life has been profound (Beagle hole 1957). The Cook Islands Christian Church remains the dominant religious group on the island, and over two-thirds of our adult sample claim allegiance to it. In addition there is an old, but numerically unimportant, Roman Catholic congregation, and three small but vigorous Protestant sects: Seventh Day Adventists, Mormons, and Jehovah's Witnessess.

Membership in the majority CICC church rather than in one of the four minority churches has no consistent or statistically significant association with higher or lower probability of being rivalrous: for men, CICC members are slightly less rivalrous than members of other churches; for women the opposite was found. One of the local CICC pastors in our sample was completely rivalrous on the Coin Game, as were several prominent deacons and Sunday School leaders (many of whom are also teachers).*

Regardless of denomination, church activities are among the most important and common social events on the island. Most churches hold services several times during the week and at least twice on Sundays. Although informants state that church attendance on the island is falling off, particularly at the early morning services during the week, about two-thirds of our adults claim to attend church regularly - that is at least once per week. Again, there is no consistent association between attendance and rivalry, with weak trends among men and women in opposite directions. Since church-going is so much of the ordinary person's perceived proper role on this island, especially for women, and is so important for validating leadership as well, perhaps attendance is relatively meaningless with regard to this personality trait.

Men holding traditional titles within the social structure (mataiapo or house of ariki) might be expected to be more traditional in personality than non-titled men.** But in fact they proved to be slightly more rivalrous (53% to 46% respectively) and less generous (12% to 22% respectively). Over a third of these traditional leaders have had more than average education (as compared to 27% for all men in the sample), however, and 59% have been to New Zealand (as compared to 37% for all men), suggesting that titled men are largely drawn from among the island's elite in Western terms as well. Alternatively, their traditional status may have contributed to greater exposure to Western influence, and thus placed them among the island's modern elite. Only two of the 7 men in our sample who hold elected positions of village or island-wide leadership, however, were rivalrous (29%), and this figure is substantially lower than for the community at large.

A quite different type of identification measure involves attitudes toward traditional and Western ways of doing things. We spent a great deal of time and effort constructing a six-item, semi-structured attitude questionnaire to tap a preference for individualized (Western) or group-oriented (traditional) personality characteristics and ways of doing things. We chose six topics where differences of

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* Among men there is an almost significant tendency, however, for church leaders - pastors, deacons, elders - regardless of denomination, to be less rivalrous than other men (33% to 56%). Too few women held such positions to permit a meaningful test.

** Women can also hold titles, but there were too few of these in our sample to permit a meaningful test.

opinion divided the community, such as whether land should be divided into individual allotments or kept in large family units, or whether it was better to work with others in a group or on your own. Although men discussed these issues thoughtfully and at length, no consistent pattern of responses has yet been found among topics, and none of the six bore the slightest relationship to a rivalrous predisposition.

In conclusion, the results of our efforts to relate possible indicators of an identification with a Western or traditional way of life have yielded no strong or consistent relationship to a rivalrous personality predisposition. It would appear that the development of rivalry among these islanders is not a matter of voluntary adoption of Western character traits. Rather it may be epiphenomenal, the unintended by-product or involuntary reaction to other changes in their way of life which either foster rivalry, or permit its development unchecked.*

Several potential factors in the development of rivalry do not easily fit within a scheme of exposure, access, and identification with Western European culture, yet have substantial sociological interest. For adult men, for example, the structural or experiential factor most strongly associated with a rivalrous personality predisposition is being the head of a nuclear or "conjugal" family, a modern family form (Goode 1963).

Fifty years ago brothers and sisters plus their parents, spouses and children commonly lived together in large family houses, with authority normally passing down from the senior male at death or senility. Some of these old houses are still in use, but most have been replaced by smaller units. Some informants say this is because brothers can no longer work harmoniously together, and that children, after they attain majority, no longer respect the authority of their parents. Conjugal households are a means for avoiding the resulting interpersonal conflicts. Other persons simply appreciate the independence from outside authority which a nuclear household provides.

Roughly a quarter of our male sample still live in households containing two generations of adults, plus a third generation of dependent children (often in addition to the senior male's own small children". Another quarter live in "hour-glass" families, where their adult children have moved out (often migrating to New Zealand) leaving their dependent children behind. Sometimes these grandchildren have been "adopted" to provide their grandparents with help and comfort in their old age. These two types of families grade into each other, shift as adult children come and go, and are difficult to distinguish reliably. But for purposes of the present analysis, this does not matter: the proportion of rivalrous men in either of these two types of extended families is about the same, roughly one-third.(See Table 4)

By contrast, being the head of a conjugal family is strongly associated with a rivalrous personality predisposition. This is particularly true if the family includes only biological children, rather than adopted or "feeding children", as is common throughout Polynesia (Carroll 1970). Half of the men in our sample were heads of nuclear families; 73% of those whose children were all biologically their own were rivalrous, and 59% of those with one or more feeding children. Combined, these nuclear household heads are different from their fellow Aitutakians in personality at a highly significant level ($p<.01$).

* N. Graves similarly found that involuntary reactions to acculturation pressures among Spanish American families produced more significant and extensive effects upon child rearing than did voluntary adoption of Western ways (Graves and Graves 1975, N. Graves In Press).

Table 4.

RELATIONSHIPS BETWEEN FAMILY STRUCTURE, SIZE, AND RIVALRY/GENEROSITY
- Adult Community Sample -

Family Type	Men		Women	
nuclear	N = 15	R = 73% G = 7%	N = 16	R = 31% G = 19%
nuclear plus adopted children	N = 17	R = 59% G = 20%	N = 7	R = 29% G = 57%
extended	N = 39	R = 33% G = 23%	N = 34	R = 53% G = 18%
Household Size				
8 or less	N = 36	R = 50% G = 11%	N = 34	R = 38% G = 9%
9 or more	N = 34	R = 44% G = 26%	N = 22	R = 50% G = 36%

This difference between men living in a nuclear or extended family may be partly a life-cycle phenomenon, but the association with rivalry is far stronger than was found with age. Perhaps extended families require a higher degree of interpersonal sensitivity and cooperation among adult members than is true of a nuclear family. And a willingness to feed and raise another's children would seem clearly associated with traditional patterns of group solidarity and generosity.

Among women, the proportion living with these two major types of families, nuclear and extended, is about the same as for men, but the direction of the association with rivalry though non-significant ($p < .10$) is reversed. Fifty-three percent of the women living in extended households are rivalrous, whereas this is true of only 31% of those in nuclear households.

Family size reveals a similar reversal. The median household size in our sample is eight. Among men, those living in households larger than this median are slightly less rivalrous than those in smaller households (44% to 50%). For women the opposite is true. Fifty percent of those in families of 9 or more are rivalrous, whereas the percentage in smaller families is only 38%. But for both men and women a higher proportion of generous subjects are found in larger families.

These reversals are similar to the complex differences between men and women reported by Howard in his study of Westernization among native Hawaiian families (Howard 1974). Perhaps older women, particularly those in charge of a large or extended family, may be more commanding and assertive than young women with small nuclear families, the assertiveness factor being expressed in our study as rivalry on the Coin Game. Conversely, we suspect, in nuclear families the husbands may be the assertive ones, having made the break from extended family ties to establish their own household.

To summarize our findings for adults, older men, living in remote areas of the island as part of an extended, three-generation family, who are engaged in traditional planting and fishing activities, who have had less than average formal education and have never been to New Zealand have a consistently low probability of being rivalrous on the Coin Game. By contrast, younger men heading nuclear families, who are involved in the wage economy, particularly in skilled, professional or managerial positions, who have more than average formal education and have been to New Zealand at least once, have a consistently high probability of displaying a rivalrous personality predisposition. Women have a similar pattern of results, except for age and family structure, where weak reversals take place. These results would seem to support the contention that rivalry is a Western import, and that generosity represents the preferred traditional mode of interpersonal relations on this island.

The question remains whether rivalry reflects the voluntary adoption by Aitutakians of a Western or modern personality trait, or whether it is a non-voluntary by-product of involvement in modern institutions and activities. The failure of our data to reveal any significant or consistent tendency for rivalry to be associated with indices of identification with or preference for a Western way of life or Western material goods argues for the latter point of view. Data from our work with samples of school children will serve to shed further light on this issue.

Results - Form One Pupils

During November 1974, 125 Form I pupils (median age 12) were given the Coin Game as part of a larger testing program. These were the children for whom father/caretaker data were presented above, and the same "hypothetical other" technique was employed as among adults. Thus direct comparisons can be made. Like their parents, almost half of this group were "rivalrous" by our criterion of a total score of 6 or more. This again enables us to examine which groups of pupils are more rivalrous than others, and perhaps to tease out factors within the setting which promote and sustain a non-traditional, rivalrous personality predisposition. Correlates with rivalry can be divided into two major groups: those reflecting the influence of the home environment, and those reflecting the influence of the school.

In general, a pupil's home background does not appear to be a strong influence on this personality predisposition, or perhaps more accurately, we have not yet isolated many home influences which do appear significant. Fifty-five percent of the children on the island in this age group are living with their biological parents; 16% are living with grandparents (usually their parents have migrated to New Zealand), 10% are adopted (usually by close collateral relatives of their parents, such as mother's sister), 8% have a stepfather, and 11% have no father or father surrogate in the home, either because he is dead or because he left home, usually migrating to New Zealand and no returning. But for both boys and girls, those living with their biological fathers are little different in rivalry from those living with other types of caretakers(Table 5).

Nor does household size make any difference for either boys or girls. The median household size for these children is eight with a range from 2 to 20. But those living in large households are no more generous or less rivalrous than those from small households. This was unanticipated, given the important caretaking role often being played especially by girls at this age.

Since most children on Aitutaki actually spend much of their time in large peer groups, with friends often being treated as brothers and sisters, and since they often move freely between related households, being disciplined by whichever adult may observe their indiscretions, we should not be surprised that family size and blood parenthood are insignificant for most children in this society for the formation of this particular character trait.*

There is one group of children who are exceptions to this generalization. When we look at family structure, we find, as we did among adult men, that both boys and girls living with their own biological parents in a nuclear household without adopted brothers or sisters were significantly more likely to be rivalrous than those living in other types of households ($p < .05$). Although only slightly more than a quarter of the Form I children came from nuclear households of this type, approximately two-thirds of both sexes from such families were rivalrous, whereas in more traditional households this rate was about 40%.

As with their parents, there is a consistent, though non-significant ($p < .10$),

* Moreover, both size and composition of many families in Aitutaki change within relatively short time periods, with relatives and siblings coming and going. Some families have two homes between which they shift, and some children have alternative families with whom they can choose to stay.

Table 5.

RELATIONSHIPS BETWEEN FAMILY STRUCTURE, SIZE, AND RIVALRY/GENEROSITY
- Form I Pupil Sample -

Parental Status	Boys		Girls	
Child living with:				
biological father	N = 35	R = 46% G = 17%	N = 25	R = 52% G = 16%
other male caretaker	N = 23	R = 39% G = 35%	N = 13	R = 46% G = 31%
no father	N = 6	R = 50% G = 33%	N = 6	R = 17% G = 17%
Household Size				
8 or less	N = 33	R = 42% G = 24%	N = 23	R = 48% G = 17%
9 or more	N = 29	R = 45% G = 24%	N = 22	R = 45% G = 23%
Family Type				
nuclear	N = 16	R = 69% G = 19%	N = 11	R = 64% G = 0%
nuclear plus adopted children	N = 11	R = 27% G = 27%	N = 11	R = 45% G = 36%
extended	N = 35	R = 37% G = 26%	N = 23	R = 30% G = 22%

trend among both boys and girls for those living in town to be more rivalrous and less generous than those living in the rural villages (Table 6). Other home background variables, however, have almost no influence on boys' character, and very little for the girls. For example, the correlation between a father's Coin Game performance and that by his son is essentially nil ($r = -.08$). Fathers and daughters scores correlated .28, which has a chance probability of about .05, but accounts for little variance nevertheless. Similarly, father's occupation has no relationship to their boy's coin game performance, but there is a strong trend for girls whose fathers hold higher status jobs to be more rivalrous and less generous.

Good health is one home variable which appears more important for boys than for girls. Open sores and healing scabs are a common sight on Aitutaki, testifying to high rates of skin infection, particularly among children. As we learned from experience with our own children, good diet is an important factor. But given the dust, the flies, the unscreened pit latrines, and the pigs, horses, goats, and chickens wandering everywhere, scratched insect bites can easily become infected.

In the absence of more thorough medical examination, we used these open and healing sores as a quick basis for rating each child's general health state. This was supplemented by body build for the few children who were notably over or under weight. Since most children are barefoot and schoolboys normally wear nothing but shorts, it was easy to rate these children along a four-point scale which has subsequently been collapsed to two.

Almost 60% of boys rated in good health with few sores were rivalrous on the Coin Game, as compared with 34% among the other half rated as poorer in health ($p<.05$). But no such relationship was found among girls. It seems reasonable to interpret this as the result of the role sport may play in the development of rivalry among boys in contrast to girls.

In summary, with the exception of the children living in nuclear families on a Western model, home background appears to have little influence on the development of generosity or rivalry among these children. Girls, however, appear to be somewhat more susceptible to home influence than boys.

By contrast with these relatively weak associations between rivalry and family background, the school appears to have a strong and consistent influence on the formation of rivalry among both boys and girls. This is reasonable, given the basic rivalrous philosophy underlying Western education. Almost all local teachers we interviewed accept the view that the best way to motivate children is to encourage them to compete hard to obtain one of the 15 or so positions at the high school in Rarotonga.

But rivalry of this kind is strongest among those for whom academic success is a relevant and rewarding enterprise. For less than half of the children on Aitutaki would this appear to be true. Systematic classroom observations, yet to be fully analyzed, suggest that many teachers concentrate their efforts on those perceived most likely to do well, while tending to ignore the slower children, allowing them to get what they can from school without being pushed. Consequently, year-end achievement scores, rather than falling into a normal curve, are clearly bi-modal in distribution, with those averaging around a mean in the thirties or below being set well apart from those with a mean in the sixties or seventies.

This difference between those who are performing well in school and those who are not is strongly reflected in personality differences. Among both boys

Table 6.

RELATIONSHIPS BETWEEN HOME BACKGROUND AND RIVALRY/GENEROSITY
- Form I Pupil Sample -

	Boys		Girls	
Location on Island				
town	N = 24	R = 62% G = 12%	N = 15	R = 53% G = 13%
country	N = 45	R = 40% G = 29%	N = 32	R = 44% G = 25%
Father's Occupation				
planter/fisherman	N = 26	R = 46% G = 27%	N = 18	R = 39% G = 28%
labourer	N = 16	R = 44% G = 31%	N = 14	R = 50% G = 14%
skilled craftsman, professional, businessman	N = 22	R = 45% G = 18%	N = 11	R = 64% G = 9%
Health				
many sores	N = 32	R = 34% G = 34%	N = 18	R = 56% G = 17%
few sores	N = 37	R = 59% G = 14%	N = 30	R = 43% G = 23%

and girls (though the effect is stronger for boys), those whose achievement scores fall in the upper portion of the distribution (marks of sixty or above) have almost twice the probability of being rivalrous on the Coin Game as those with achievement scores in the lower portion of the distribution. ($p<.01$). And only 7% of the high achievers are generous, as compared with 36% in the low academic group (see Table 7, following page).

The attitude of parents toward the school and its objectives is an important bridging variable between the influence of the home and the school environments on these children's character development. The quality of a pupil's grooming and school uniform can be taken as an indirect indicator of this attitude. School officials on Aitutaki make a great deal of grooming, with daily inspections in the classroom and school-wide inspections at least weekly. Our own children stood in mortal terror of going to school in dirty shorts or with unscrubbed fingernails, and we were sent repeated requests from the school to further trim their hair.

We rated children's uniforms and grooming at the time of testing, originally with the intent of using it as a possible alternative indicator of family socio-economic status. But our four-point rating proved to be unrelated to father's job type. Since school uniforms are simple and inexpensive to purchase or sew, this lack of correlation with economic status is not so surprising. With but few exceptions, any family on Aitutaki can send their children to school looking neat and tidy if they consider it important to do so. In large families, furthermore, where children often take major responsibility for their own dress and grooming, this rating probably reflects the child's own attitudes as much as his parents'.

This rating of uniforms had the strongest relationship of any of our measures to the pupils' personalities. Within both sex groups, almost two-thirds of those with neat hair and complete uniforms in good condition were rivalrous, as compared to only about one-quarter of the rest of the pupils ($p<.001$).

A multi-variate analysis combining dress and grooming as a measure of attitudes toward school with year-end achievement scores (marks) as a measure of success with school results in an extremely strong association with the pupil's personality, as measured by the Coin Game. Attitudes and achievement are mutually reinforcing, of course, and therefore are highly correlated, especially among girls. But either one without the other results in a substantial decrease in the probability that the pupil will have adopted a rivalrous predisposition in relation to his fellows. About 40% of the pupils, for example, had both high marks and good uniforms; 68% of these were rivalrous on the Coin Game and only 4% were generous. Of those pupils who were high on only one of these measures, only 40% were rivalrous and 26% were generous. The small group who were high on neither measure (less than 20%) were even more traditional in personality: only 23% were rivalrous and 50% were generous. Although teachers may see this finding as validating their classroom methods, it presents a moral dilemma: Those children who are being trained most rigourously and successfully for future leadership roles are also the ones who are least likely to be disposed to use their talents for the welfare of their community.

Table 7.

RELATIONSHIPS BETWEEN SCHOOL VARIABLES AND RIVALRY/GENEROSITY
-- Form I Pupil Sample -

	boys		Girls	
Academic Marks				
high (≥ 60%)	N = 33	R = 67% G = 9%	N = 22	R = 59% G = 5%
low (< 60%)	N = 32	R = 34% G = 38%	N = 27	R = 37% G = 33%
School Uniform				
good	N = 50	R = 56% G = 14%	N = 28	R = 64% G = 4%
poor	N = 18	R = 28% G = 44%	N = 20	R = 25% G = 45%

Combining Marks and Uniforms	boys plus girls	
high on both indices	N = 47	R = 68% G = 4%
mixed	N = 47	R = 40% G = 26%
low on both indices	N = 22	R = 23% G = 50%

Results - Developmental Sample

Further evidence for the impact of the school environment on these children's personality can be found in our developmental data. 530 children were given the Coin Game - essentially all those in grades one, two, three, five, and Forms I and II. These children fall in the age range from 5 to 14. In order to increase the reality of the experimental situation, particularly for younger subjects, the "real other" technique, described in the section on "Procedure" above, was used throughout.* Although most children, even at age five, appeared to understand the task perfectly and perform it without difficulty, about 10% of the sample could not. These children would select one side, usually the left (where choices on the pretrial and first two pairs are equalizing or generous) and then continue making all their choices on the same side. Since almost three-quarters of these children were first or second graders (and 70% were girls), it seems reasonable to interpret their performance as reflecting rigidity and inability to cope with the testing situation. They have therefor- been eliminated from our analyses. In order to keep our numbers within each age category of reasonable size, first and second graders were combined into a single group.

The extensive observational data on the interaction between children in the testing situation have yet to be analyzed. But impressionistically, rivalrous children appear to exhibit more conflict-behaviour (hiding the face, avoiding eye contact with the other child, fidgeting, scratching, and other forms of displacement behaviour) and to enjoy the experiment far less than did those who adopted an equalizing or generous strategy. Yet with each successive year in school the number of rivalrous children increased.

The results, summarized in Figure 2, are striking. At five or six years of age, when European children are usually considered to be at their most selfish stage, these Polynesian children are highly generous. Between 40 and 50% of both sex groups go out of their way to give the other child more one-cent pieces than they take for themselves. This is even more startling when we observe that most of the children's own winnings were spent at little shops near each school for sweets which were likely as not shared among their friends as well. Only about 15% of the children in this age group are rivalrous.

This benign state of affairs does not last for long. Classroom observations make clear that from their first day in school teachers begin molding these children to the preferred Western personality, pitting one child against another and rewarding successful competitive performance ("Who can answer this one first?" Children, slapping palms and shooting hands into the air: "Tee-chah! Tee-chah!" Teacher: "Good boy!") By third grade the effect of this programme of personality change can already be seen, and by about Grade 4 for boys and Grade 6 for girls more rivalry than generosity is being displayed on our Coin Game. By Form I and II, as the children approach their final years of schooling on the island, this process is essentially complete, and the proportion of rivalrous children is much like that found in the adult population.

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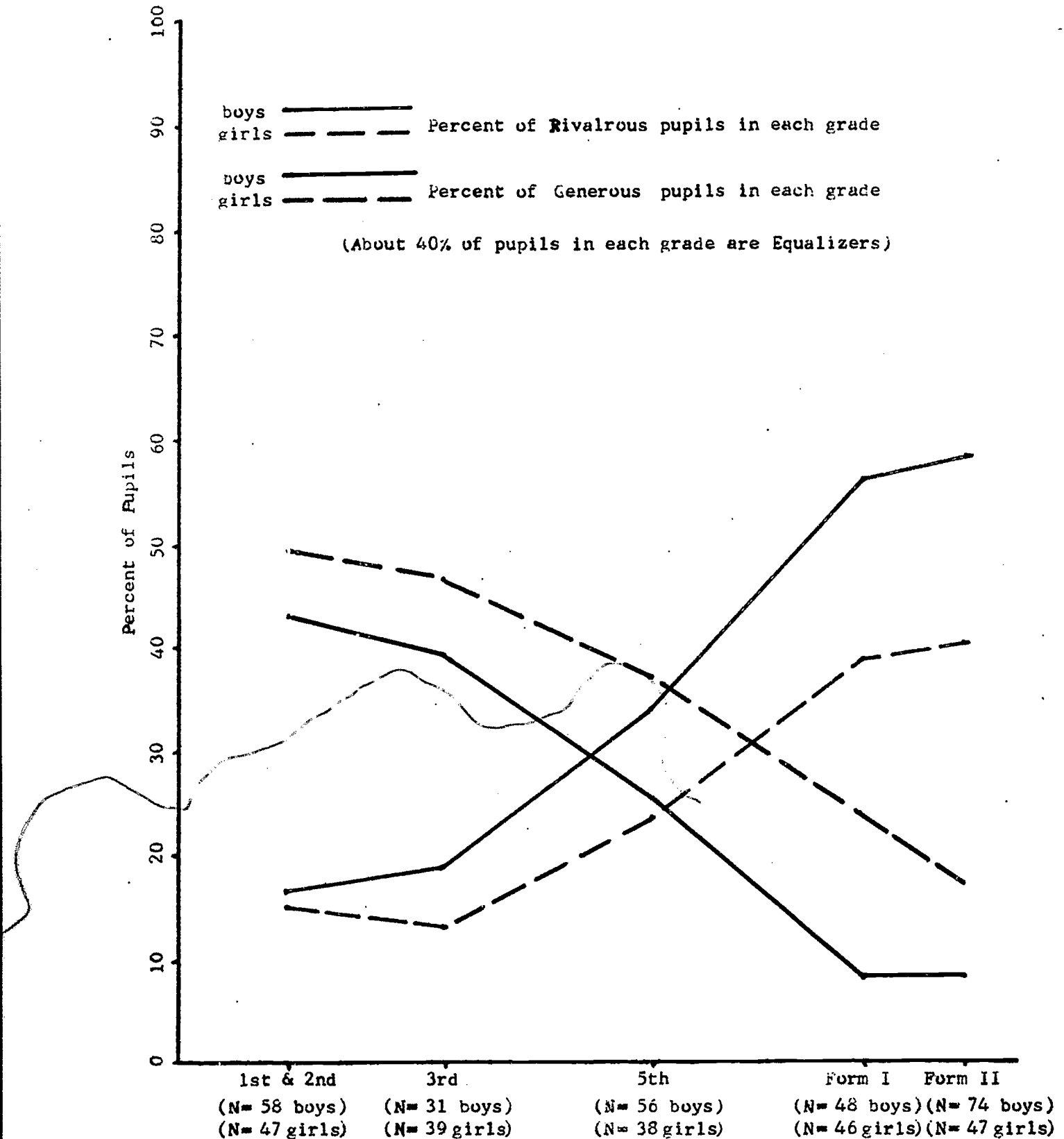
* The Form II subjects were the same 125 tested about four months earlier while they were still in Form I, using a "hypothetical other". So for this group we have the measure in both forms for comparison. But note that their scores on the "real other" administration are very similar to those of the new Form I children, who participated in the experiment for the first time with a "real other".

Figure 2.

DEVELOPMENT OF RIVALRY IN AITUTAKI CHILDREN



EXPERIMENT TWO: THE COOPERATION BOARD

In this study of modernization, we are interested not only in changes in personality predisposition, but also the implications of these changes for community life. What would happen to social cohesiveness on the island if not only the motivation but also the interpersonal skills necessary to achieve coordination of efforts within groups were decreasing? Our discovery of a high degree of rivalry among primary school children, increasing with each grade, suggested that cooperation could be at least problematic in the future. Schools, as elsewhere, emphasized individual achievement except during team sport and traditional Maori dance and song. Group work in the classroom was largely desultory when the children were on their own, and when the teacher was present individuals engaged in bids for his or her attention, or attempted to avoid notice, rather than relating to each other. Some reinforcement for group-level striving occurred in those classes where "teams" had been formed which received points for good citizenship, or for the outstanding performance of individual members (as in a spelling bee). And compared to typical Western classrooms, a response by the whole class to questions ("choral teaching") was more frequent. Typical individual reward methods, however, increased with each successive grade level. We therefore sought to discover experimentally the factors related to successful group functioning, as well a predispositions or behaviors displayed by the children which might inhibit cooperative group work.

A number of psychological studies have found rural or non-Western groups perform more cooperatively in experimental tasks than urban and/or European groups. Rural Mexican children (Madsen 1967, Madsen & Shapira 1970, Kagan & Madsen 1971), Blackfoot Indians (Miller & Thomas 1972, Miller 1973), Australian Aborigines (Sommerlad & Bellingham 1972), Rarotongan Cook Islanders and rural New Zealand Maoris (Thomas 1975) have all been shown to respond more cooperatively than European children. The major variable differentiating performance within culture groups has been that of rural or urban location, though class status has been of interest as well (Madsen 1967, Shapira & Madsen 1969, Thomas in press). Furthermore, the interpersonal processes involved in cooperation or competition appear to be readily assimilated from other culture groups, since Miller (1973) reports that in an integrated school Blackfoot Indians are more competitive than those from an all-Indian reservation school, while the Canadian whites who go to school with them are more cooperative than an urban Canadian sample from an all-white school. Such studies made us fairly confident that Aitutaki children had remained more cooperative than urban or European groups.

To examine this issue and its implications, the Madsen Cooperation Board (Madsen 1967) proved to be an ideal experimental procedure. The task requires no specifically verbal skills, has been used among children with a wide range of age and socio-cultural background, is not as complex as the typical Prisoner's Dilemma games used with adults, provides adequate incentives, and simulates an actual group problem-solving situation which is of intrinsic interest to most children. It provides a context where either cooperation or competitive behaviour can occur, but where only cooperative acts are rewarded. Because the directions to the task include no explicit statement of what specific actions the children must engage in to receive rewards, responses in the experiment have often been considered an index of personality predisposition. It can as easily be interpreted as a test of interpersonal skills and problem-solving facility, as we shall see.

The apparatus for the experiment consists of a board 45 centimeters (about 18 inches) square with eyelets at each corner through which strings

are passed and attached to a movable pen-holder in the center of the board. When a paper is placed on the board, the strings can be pulled to move a ball-point pen over the paper. (See Figure 3.) The board is attached to a small table, and four children sit at the corners, each holding a string. Because of the eyelets, it is only possible for an individual alone to pull the pen directly toward his corner, but by coordinated adjustments in pulling and releasing among all four participants, the pen may be made to travel in any direction. Furthermore, no child can pull the pen into his own corner without the consent of the others, since the combined pulling of any three individuals against the fourth is sufficient to prevent him from succeeding. Responses of the participants are automatically recorded by the movements of the pen on the paper.

Our procedure for administering the experiment follows that of Thomas (1975). Circles about 2½ centimeters in diameter had been drawn on the paper 10 centimeters from each corner. The device was first demonstrated to the children by the authors, who each took two of the strings and showed how the pen could move anywhere on the paper, making the line pass through all four circles. We then placed a fresh sheet of paper on the board, and told the children that they would now have a chance to make the pen draw on the paper themselves. The children were asked to write their names above the circle by their own corner. Each child was then told that each time the pen passed through his or her circle, he or she would receive a two-cent piece. This was physically demonstrated by speaking to each child by name and placing a sample two-cent piece in front of him. Then all coins were removed, and the children were told that they would be given a signal to begin and end, and were free to talk all they wished during the experiment. In an effort to provide a neutral instructional set, care was taken to avoid the word "pull" throughout, and at a signal one of us simply said "You may now begin drawing your line." Each group was allowed four one-minute trials, and rewards were distributed at the end of each trial.

Ethnicity and Cooperation

Thirty-eight groups of Form I children were tested on the Cooperation Board, 16 groups of girls, and 22 groups of boys. Ages ranged from 11 to 13, with a mean of 12. Twenty-seven of these groups were tested in late 1974 and 11 near the beginning of the following school year, in early 1975. Overall results did not differ between the 1974 and 1975 series, so these have been combined for purposes of the following comparisons. Our criterion for successful cooperation was the same as Thomas: at least 3 of the 4 group members had to receive a reward within a single trial.* Using this criterion, 17 of our 38 groups were cooperative, for an overall rate of 45%. Working among Cook Island children in Rarotonga, Thomas found quite similar results. Among the 8 groups falling within the same age range as our own subjects, and equally divided by sex, 4 were cooperative. This rate is not dissimilar to what he found among rural Maori children in New Zealand (33%), but differs sharply from success rates among both urban Maori (8%) and European (12%) children. It seems reasonable to assume that upon moving to New Zealand cities, or even as their home islands modernize further, Cook Islanders will react similarly to urban Maoris.**

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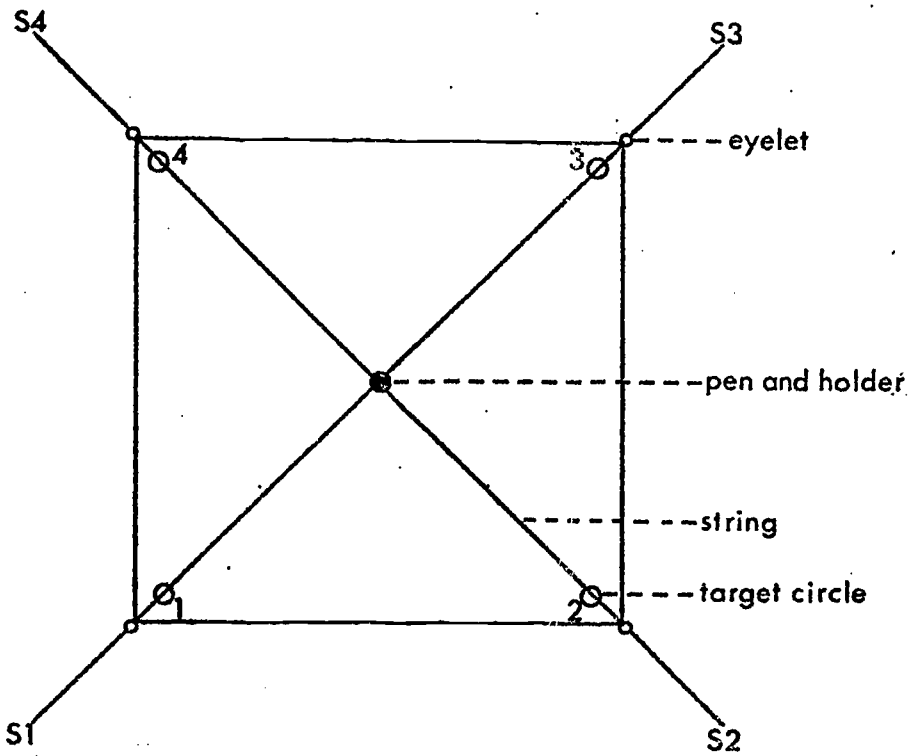
* In Thomas' study, groups were judged "cooperative" on the basis of a larger number of trials, but only 9% became cooperative after trial 4. In order to make our results directly comparable, we have rescored his original data. Thus figures reported here differ slightly from those in his article (Thomas 1975).

** The same shift away from cooperation was found for Mexican children whose parents had moved to American cities, compared to rural Mexican children (Madsen & Shapira 1970, Kagan & Madsen 1971).

Figure 3

DIAGRAM OF THE COOPERATION BOARD



Rivalry, Academic Standing, Leadership, and Cooperation

The mere fact of urban residence or a modern economic and social system, however, does not do much to help us understand the factors involved in competition versus cooperation. In order to discover the correlates of cooperative behavior, we did not place school children randomly into our groups, but composed these groups to test for the effects of specific determinants upon performance. As we have seen, children who strove hard to please the teacher in class and who did well in their school subjects tended to be substantially more rivalrous on the Coin Game. On the basis of personality attributes, therefore we hypothesized that groups made up of children who ranked low in their class in the teacher's judgment should have higher rates of success on the Cooperation Board than high-ranking children. At the same time, we were curious whether the presence of a high-ranking class "leader" might further facilitate cooperation.

Teachers were asked to rank their pupils along a 7-point scale from "the best school children" they had known throughout their service, to "the worst school children" they had known. Children ranked at 3½ or above were classified as high academic, and those below this on the ladder scale were considered low academic. (This division is also the point above which teachers judged most pupils as capable of going on to Tereora in Rarotonga, and below which none were so judged.) This gave us 10 groups of all high academic children, 11 groups of all low academic children, and 6 groups where high-ranking "leaders" were combined with low-ranking "followers".

The results were completely at odds with our expectations. Five out of 10 groups composed of high academic children were successful, whereas only 4 out of the 11 groups of low academics were successful. This finding was given stronger support at the end of the 1974 school year when actual achievement scores in the form of marks became available. When average marks high enough for the child to be considered capable of going on to Tereora (60 or above) were used as a basis for our classification, successful groups on the Cooperation Board contained 61% "high academics", whereas unsuccessful groups contained only 38% "high academics" ($p < .02$)*.

High-ranking leaders also provided no particular assistance for groups of low academic children. Only two of the six groups containing class leaders were successful cooperators. In these groups the leader had helped direct the others to a correct solution, but a secondary leader had emerged from among the low-ranking children who encouraged them to support the nominal leader's suggestions. In the four unsuccessful groups, furthermore, the high-ranking leaders not only gave no helpful suggestions but were among the first to begin pulling competitively, with disastrous results for the group as a whole.

Our designated "leaders" were those commonly chosen by teachers in their classrooms to direct small group work. Such leaders often took an authoritarian role in classroom groups, and were also likely to be considered a "teacher's pet". In our ethnographic work in the community, however, we noted that in naturally occurring work groups authoritarian leadership is uncommon, and that those who attempt to lead in this manner are deflated by teasing or ignored. Compliance

*Individual outcomes on the Cooperation Board are not independent events, since all four children in a successful group will be classified as "successful". Therefore it is not strictly legitimate to apply a chi square test of significance. But again, we have done so merely to provide some standard for judging the magnitude of our results.

with group goals is achieved through informal techniques among equals, and the most respected community leaders are those who do not set themselves above others and work hardest for the common good.

The basis for our original hypothesis, however, that rivalry would serve as a barrier to success on the Cooperation Board, was not without support. Fifty-nine percent of the children in unsuccessful groups were rivalrous on the Coin Game,* whereas this was true of only 39% in successful groups ($p < .05$). This apparent empirical paradox can be explained by the lack of a perfect correlation between low marks and a non-rivalrous personality, but it left us unsure of the roles being played by both academic standing and a rivalrous personality predisposition.

The 1975 series of experiments was designed to provide clearer evidence on this issue. By this time we had come to the conclusion that the Cooperation Board technique as we were administering it must require a certain level of problem-solving skill, so that high academic children had learned more quickly than low academic children that they would not be rewarded unless they cooperated and took turns. The cognitive dimension seemed particularly important for finding a solution to the problem, while behavioural habits and personality predispositions seemed potentially important for the coordination of group efforts.

To control for academic ability, at least crudely, while varying personality, we composed 8 groups of children who were middling-to-low in teacher ratings (steps 4 to 6 on their 7-point scale), 4 of which were made up of children who had all been rivalrous on the Coin Game, and 4 of which were made up of non-rivalrous children. (Two groups were composed of boys, two of girls within each of these two types.) To control for personality predisposition while varying class rank, we formed three additional groups from among high academic children all of whom had been rivalrous on the Coin Game, to compare with the rivalrous groups of middling-to-low children.** Our first hypothesis was that children in groups made up of all non-rivalrous members should be able to cooperate better than those in groups at the same academic level composed of all rivalrous children. Our second hypothesis was that rivalrous children of high academic ability, because presumably better problem solvers, should be better able to overcome their rivalrous tendencies and cooperate than would rivalrous children of lower academic ability.

Although the number of groups is small, the results clearly support both hypotheses. Three out of the four middle-ranking non-rivalrous groups achieved successful cooperation, and two of these did so on Trial 1. Only <u>one</u> out of the four rivalrous groups of similar academic ability cooperated, and they succeeded only on Trial 4 after a "eureka" experience. Accidentally, one person continued pulling after time was called on Trial 3 when others had let up on their strings, and when the pen went into his circle, they suddenly saw the solution, and managed to cooperate minimally on the last trial. Thus we found group composition by personality to be highly predictive of success.

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* In this discussion, all Coin Game results refer to those obtained in 1975 using the "real other" procedure, in order to have scores from identical procedures when comparing the 1974 and 1975 groups of Form I children.

** High-ranking groups of non-rivalrous children were not possible, because only one high-ranking child in the two classes being tested was clearly non-rivalrous. Of the three high academic-rivalrous groups, two were composed of boys and one of girls. A second girls' group could not be tested because three members came down with the flu.

The second hypothesis, however, also received support. Of the three rivalrous high academic groups, two were successful, while only one out of four of the rivalrous groups of lower academic ability had cooperated, and that minimally, as described above. We conclude, therefore, that at a certain level, problem-solving skills can help children to overcome rivalistic tendencies and cooperate when such behaviour is rewarded.

We are also in a position to say something in a preliminary way about what types of behaviour, at least among Aitutaki children, make for success or failure on a group problem-solving task like the Cooperation Board. While one of us was recording the experimental results, the other was making a narrative description of the social interaction taking place. These descriptions were then content-analyzed, the behaviours classified into theoretically meaningful types, and successful versus unsuccessful groups compared for the frequency with which their members displayed each type. The results are presented in Table 8, including a list of behavioural categories, sub-categories, and examples of specific behaviours falling under each. The relative frequencies of these behaviours were so similar in the 1974 and 1975 samples that they have been combined.

The most striking result which emerged from this work was that leadership behaviour was far less important for the success or failure of these groups than membership behaviour. Successful groups did exhibit more leadership directed toward group goals than did unsuccessful groups (18% to 8%, of all acts recorded) and less individual behaviour which could provide a rivalistic role model (19% to 29%). Since successful groups had about the same amount of group-oriented or rivalistic leadership displayed within them (18% to 19%), one may wonder how they still managed to cooperate in the end. The answer is that in successful groups the proportion of membership behaviour which was oriented toward group goals was very high: 38% as compared to only 10% among unsuccessful groups. Successful group members more often listened to each other, conferred, watched each other for cues and directions, and mutually agreed upon a course of action. It should be noted that these behaviours were as much non-verbal as verbal in nature. Furthermore, successful groups had a much lower rate of rivalistic membership behaviour, such as imitating the rivalrous acts of others, ignoring or refusing another's suggestions, etc. (9% to 25%). It would seem that while a certain degree of positive leadership is helpful, the major factor involved in cooperation is for members to be willing to entertain each other's suggestions and keep in touch with one another, rather than each pursuing his own aims. This kind of behaviour on the part of most members can overcome, most of the time, rivalistic behaviour on the part of some.

We also noted certain strategies used repeatedly by successful groups to overcome rivalrous tendencies among their members. The most common of these, particularly among girls (67% of girls' successful groups versus 18% of boys') was "buying off" one rivalrous member by always allowing her to pull the pen to her circle first, after which she was more prepared to let the other children have a turn. If a girls' group had more than one member who tested rivalrous on the Coin Game, however, this strategy would not work, and none of these girls' groups succeeded. Another strategy used by a successful leader was to designate someone other than himself to go first. Otherwise, his suggestion that they all take turns was likely to be ignored. The willingness of a leader to be generous in this fashion depended on readiness to suppress rivalrous tendencies. Successful groups not only had fewer members rivalrous on the Coin Game to begin with, but only one-third of these rivalrous persons behaved as rivalrous models on the Cooperation Board. In unsuccessful groups, however, 70% of the rivalrous persons competed fiercely. The most successfully cooperative groups of all were careful to rotate first turns among all four members over the four trials.

Table 8.

BEHAVIOUR ON THE COOPERATION BOARD
- Form I Pupils -

Category Description	Percentage of Total Acts: 17 Successful Groups (662 acts)	21 Unsuccessful Groups (815 acts)
I. Behaviour Directed Toward a Group Goal		
Leadership (directs, reproves)	18%	8%
Participative Membership (listens, looks at, watches others, confers, mutual agreement with others)	38%	10%
Contributive Social Skills (smiles, jokes, converses)	5%	6%
II. Behaviour Directed Toward Individual Goals		
Rivalistic Model (initiates rivalrous act, pulls, takes pen twice, suggests collusion against others)	19%	29%
Rivalistic Membership (imitates rivalrous acts, refuses or ignores directions, enters collusion)	9%	25%
Disruptive Social Acts (frowns, scowls, threatens, shows discouragement, nervous giggles)	6%	18%
III. Adult Orientation		
(looks at, asks help from, seeks attention of experimenters)	5%	4%
	100%	100%

The role of social skills in promoting cooperative behaviour is not clear from our results. We had anticipated that positive social acts, such as smiling, joking, and friendly encouragement, should ease tension and make it easier for participants to work together, while disruptive or negative social acts - scowls and eye-challenges, disassociation, nervous laughter, etc. - inhibit cooperation. While unsuccessful groups did have a higher proportion of disruptive or awkward behaviour, this was partially the effect of continual failure in successive trials. Successful groups showed approximately the same proportion of negative social behaviour among themselves as they did positive, and less of either type than the unsuccessful groups. There seemed little evidence that positive social acts were what counted in achieving cooperation.

Finally, we discovered that the groups did not differ in their amount of experimenter or adult orientation. Evidently our presence was familiar enough that most groups ignored it and neutral enough that it was of no particular help or hinderance to the achievement of cooperation.

In summary, we have found in the Cook Islands, as investigators have elsewhere, that a non-western group of rural children were substantially more cooperative than European children in New Zealand. But we have also found that when academic ability was average in the Cook Island children making up a group, a rivalrous personality predisposition will inhibit successful cooperation. At least in Aitutaki, cooperation seems to depend more upon the development of good membership skills than upon leadership ability or facilitative social acts. Furthermore, the wrong type of leadership - one that provides a rivalistic model or authoritarian control by a teacher's pet among lower pupils - can prevent cooperation from occurring.

CONCLUSIONS AND IMPLICATIONS

In the introduction to this paper we discussed a complex of stereotypes which European and Polynesian people hold about themselves and each other. Our data suggest that underlying these stereotypes there appears to be a kernel of truth. But the situation is far more complex than that. In the Cook Islands, both rivalrous and generous, cooperative and competitive predispositions exist side by side among people who seem to be retaining a strong identification with their traditional values. It would appear that Cook Islanders are taking on western personality characteristics not as a deliberate adoption, but despite themselves as a by-product of their efforts to become modern. In this paper we have documented the central role which Western schooling is playing in this process. In Aitutaki a rivalrous predisposition is learned through competitive interpersonal situations fostered by the Western system of education, and is sustained by a modern economic system which has reduced social interdependence. Moreover, modern wage labour with its eight-hour work day leaves little time for cooperative functions or the growing of surplus food for distribution even among those who wish to maintain communal interdependence.

What are the implications for an island community like Aitutaki in a developing nation like the Cook Islands of continuing along the present path of training in rivalry and competition? New Zealand is already giving considerable economic aid to the Cook Islands, and it is unlikely that the Cook Island government can continue to increase wages to the point where all families on the island can rely entirely on imported foods. Even if this were possible, difficulties of shipping and seasonal fluctuations in available goods would make it impracticable and very risky.* Although several formerly voluntary work

* The government of the Cook Islands is quite aware of this problem as indicated in a speech by one of the cabinet ministers, the Hon. William Estall to the Aitutaki Grower's Association in 1974, emphasizing the importance of producing more staple food crops.

programs, notably road clearance, have been taken over by the Public Works Department with an increasing use of machines instead of man-power, it would be too expensive for the government to handle many other maintenance chores which are now done by village cooperative work crews. Community needs such as sports equipment, village halls, and so forth and not met by public funds, but are raised by group efforts such as New Zealand dance tours. Most importantly, group activities such as team sports, dances, or informal sings provide the most rewarding kind of recreational diversion available. Life on the island would be a lot less fun if these were missing.

One unfortunate aspect of modern individualistic patterns and the cash economy is that anything requiring effort is deemed to rate some sort of monetary payment. As villagers agreed when discussing whether young people should be paid for their costumes, sewed for the annual Constitution dances, "Next they'll want to be paid for dancing, and soon it won't be fun anymore, but just another job." Psychological studies with schoolchildren bear out this point: once a child is given an extrinsic reward for doing something he initially did just for pleasure, he no longer wishes to do it, except when given that reward (Greene & Lepper 1974). In addition, the loss of group committment, a precious commodity for most developing countries struggling to create a sense of nationhood, would be irreplacable. School teachers are already bemoaning a lack of the "school spirit" they remember from their youth, and maintaining "community spirit" is a problem in every village.

Cook Island educators recognize the moral dilemma posed by their work. Even the most rivalrous teachers, when discussing our results with us, would voice deep concern about the undesirable side effects for the community of training children in individual competition and interpersonal rivalry. But they knew of no other way to help them acquire the intellectual skills they need for modern life.

What, other than cultural blinders, has made educators certain that rivalry is necessary for motivating learning? Studies of small group dynamics have often shown the efficacy of group over individual problem-solving for certain kinds of tasks, even among Western students (Bouchard 1975, Davis 1969, Lorge & Solomon 1958, Lorge et. al. 1958). And in a recent impressive experiment in the Austin, Texas schools, children learned just as well (or even better) in small groups of peers as when competing for the teacher's attention in the usual way (Aronson 1975). The key to cooperation in the Aronson experiment was that children were dependent on each other, rather than on the adult authority figure, for the relevant information they had to learn.

In Polynesian society there are many examples of successful group functioning which could serve as analogues for the development of cooperative classroom techniques. Work groups provide models of non-rivalistic leadership and supportive, participative membership, illustrating appropriate group behaviours similar to those we found in successful Cooperation Board groups. Groups of Polynesian youths will work extremely hard and show remarkable motivation and persistence when practicing for a dance competition. Fishing groups or roof-thatching parties smoothly coordinate efforts and talents, with even the youngest and slowest participant having an essential role to play, while learning from the more skilled members. In sports teams individuals can be inspired by the group goal with very little personal recognition.

In our study, most parents interviewed preferred children both "kite"(clever) and "tauturu i te iti tangata" (helpful to the people), and when pushed to choose between the two types, about three-quarters preferred the helpful child. They also preferred that their offspring remain with them in Aitutaki when grown rather than going off to New Zealand to "rare moni" (work for money). As we have seen,

however, most of the children learning a competitive, rivalistic style in school will not have an opportunity to go very far academically, nor will they fit into a society which still values and needs communal participation and cooperative effort. Thus they are turning out to be neither outstandingly kite nor tauturu. A more appropriate Cook Island education would emphasize the development of individual talents in the service of the community as a whole, an ideal highly honored in Western societies but practiced only in the breach. Cook Islanders could then perhaps someday serve as educational consultants for culturally disadvantaged European children with the "Nyaa-nyaa" syndrome, training their teachers to help them learn cooperatively without developing destructive rivalistic tendencies.

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